

(News Release)  
The Results of Radioactive Material Monitoring of the Surface Water Bodies  
within Ibaraki Prefecture  
(October-December Samples)

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In accordance with the Comprehensive Radiation Monitoring Plan determined by the Monitoring Coordination Meeting, the Ministry of the Environment (MOE) is continuing to monitor radioactive materials in water environments (surface water bodies (rivers, lakes and headwaters, and coasts), etc.).

Samples taken from the surface water bodies of Ibaraki Prefecture during the period of October 22-December 27, 2012 have been measured as part of MOE's efforts to monitor radioactive materials; the results have recently been compiled and are released here.

The monitoring results of radioactive materials in surface water bodies carried out to date can be found at the following web page: <http://www.env.go.jp/jishin/rmp.html#monitoring>

1. Survey Overview

(1) Survey Locations

70 environmental reference points, etc. in the surface water bodies within Ibaraki Prefecture  
(Rivers: 53 locations, Lakes and headwaters: 12 locations, Coasts: 5 locations)

(2) Survey Method

- Measurement of concentrations of radioactive materials (radioactive cesium (Cs-134 and Cs-137), etc.) in water and sediment
- Measurement of concentrations of radioactive materials and spatial dose-rate in soil in the surrounding environment of water and sediment sample collection points (river terraces, etc.)

2. Outline of Results (\* denotes the results of the previous survey (July-September 2012))

(1) Water Quality (Lower detection limit: 1Bq/L)

Cs-134+ Cs-137: Not detectable (ND) at any location (\* ND at any location)

<Reference>

Specification and Standards for Food, Food Additives, etc. in accordance with the Food Sanitation Act (Drinking Water) (Ministry of Health, Labour and Welfare Public Notice No.130, March 15, 2012)  
Radioactive cesium (total for Cs-134+Cs-137): 10Bq/kg

Target value for radioactive materials in tap water (management target for water supply facilities) (March 5, 2012; 0305 Notice No.1 from the Director of the Water Supply Division, Health Service Bureau, Ministry of Health, Labour and Welfare)

Radioactive cesium (total for Cs-134+Cs-137): 10Bq/kg

(2) Sediment (Lower detection limit: 10Bq/kg (dried mud))

Overall, the levels of both the rivers and lakes/headwaters measured were around 1,000Bq/kg or below for most of the locations (coasts: 100Bq/kg or below), and have generally remained constant or had a declining tendency.

(Rivers)

Cs-134+Cs-137: ND-4,100Bq/kg (dried mud) (\*ND-4,500Bq/kg (dried mud))

(Lakes and headwaters)

Cs-134+Cs-137: 93-1,210Bq/kg (dried mud) (\*97-1,170Bq/kg (dried mud))

(Coasts)

Cs-134+Cs-137: ND-52Bq/kg (dried mud) (\*ND-69Bq/kg (dried mud))

<Reference> Number of locations by radioactive cesium concentration (500Bq/kg)

Numbers in ( ) denote results measured on the previous occasion.

	500 or below	501 -1,000	1,001 -1,500	1,501 -2,000	2,001 -2,500	2,501 -3,000	3,001 or more	Total
Rivers	38 (32)	10 (9)	0 (3)	2 (1)	1 (0)	1 (0)	1 (2)	53 (47)
Lakes and headwaters	9 (9)	2 (2)	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)	12 (12)
Coasts	15 (6)	-	-	-	-	-	-	15 (6)

(3) Surrounding Environment (Lower detection limit: 10Bq/kg (dry))

(Rivers)

Cs-134+Cs-137: 17-3,500Bq/kg (dry) (\*75-8,300Bq/kg (dry))

Spatial dose: 0.07-0.36μSv/h

(Lakes and headwaters)

Cs-134+Cs-137: 46-4,400Bq/kg (dry) (\*ND-810Bq/kg (dry))

Spatial dose: 0.05-0.16μSv/h

(Annex for details)  
(Map attached)

Future Plans

MOE intends to continue to measure radioactive materials in water, sediment, etc. in rivers, lakes, etc., since concentrations of radioactive materials seem to show fluctuations, depending on locations, due to minor differences in sampling points or properties of samples of each survey.

### ○River: Water Quality Monitoring Results

No.	Sampling point			Sampling date	Weather	Full depth m	General items					Concentration of radioactive material Bq/L			Remarks	
	Water body	Point	Municipality				Sampling depth m	Transparency cm	Electrical conductivity mS/m	SS mg/L	Turbidity	Radioactive iodine I-131	Radioactive cesium			
													Cs-134	Cs-137		
1	Taga River System	Satonegawa River	Yamagoyabashi Bridge	Kitabarakishi City	2012/12/10	Sunny	0.3	0.0	>100	13	14	4	<1	<1	<1	
2			Murayamabashi Bridge		2012/12/10	Snow	1.0	0.0	>100	20	<1	1	<1	<1		
3		Hanazonogawa River	Kurabeishi		2012/12/10	Snow	0.7	0.0	>100	8	<1	0	<1	<1		
4			Isomarebashi Bridge		2012/12/10	Snow	0.5	0.0	80	34	6	3	<1	<1		
5			Sakaebashi Bridge		2012/12/10	Snow	1.0	0.0	>100	8	4	1	<1	<1		
6		Okitagawa River	Sakabashi Bridge		Takabagishi City	2012/12/10	Sunny	1.0	0.0	>100	13	2	1	<1	<1	<1
7			Hananukigawa River		Shinhanakubashi Bridge	Takabagishi City	2012/12/11	Sunny	0.6	0.0	>100	15	<1	1	<1	<1
8	Kujigawa River System	Kujigawa River	Yamagata	Hitachiomiya City	2012/12/5	Sunny	1.4	0.0	39	13	2	2	<1	<1	<1	
9			Sakakibashi Bridge	Hitachishi City/Tokaimura Village	2012/12/5	Sunny	0.6	0.0	76	16	2	1	<1	<1	<1	
10	Nakagawa River System	Nakagawa River	Noguchi	Hitachiomiya City/Shirosatomachi Town	2012/12/5	Sunny	1.7	0.0	>100	17	<1	1	<1	<1	<1	
11			Shimokuni	Mitoshi City	2012/12/7	Sunny	2.5	0.0	>100	23	<1	1	<1	<1	<1	
12			Katsutabashi Bridge	Mitoshi City/Hitachinakashi City	2012/12/7	Sunny	7.0	0.0	>100	191	1	2	<1	<1	<1	
13		Nakamuragawa River	Yanagisawabashi Bridge	Hitachinakashi City	2012/12/6	Sunny	2.0	0.0	57	1	8	3	<1	<1	<1	
14			Hinumagawa River	Hinumamaekawa River	Nagaokabashi Bridge	2012/12/6	Sunny	0.3	0.0	71	27	3	3	<1	<1	<1
15				Hinumagawa River	Takahashi	Ibarakimachi Town	2012/12/7	Sunny	0.5	0.0	>100	24	<1	1	<1	<1
16		Kanseigawa River		Kanseibashi Bridge	2012/12/6	Sunny	0.3	0.0	>100	37	2	1	<1	<1	<1	
17		Daiyagawa River		Oyabashi Bridge	Hokotashi City/Oaraimachi Town	2012/12/6	Sunny	0.5	0.0	>100	38	1	1	<1	<1	<1
18		Hinumagawa River		Hinumabashi Bridge	Mitoshi City/Oaraimachi Town	2012/12/6	Sunny	1.1	0.0	>100	3,170	5	5	<1	<1	<1
19		Kitaura Lake		Hokotagawa River	Aashibashi Bridge	Hokotashi City	2012/12/6	Sunny	1.5	0.0	73	48	3	2	<1	<1
20			Tomoogawa River	Shintomoogawabashi Bridge	2012/12/6	Sunny	1.2	0.0	>100	79	4	2	<1	<1	<1	
21			Tariogawa River	Tanabashi Bridge	2012/12/6	Sunny	0.2	0.0	>100	79	4	2	<1	<1	<1	
22			Takedagawa River	Uchijukuhashi Bridge	2012/12/12	Sunny	0.3	0.0	72	33	3	2	<1	<1	<1	
23	Yamadagawa River		Niuroshibashi Bridge	Namegatashi City	2012/12/12	Sunny	0.3	0.0	19	31	26	18	<1	<1	<1	
24	Kurakawa River		Kurakawabashi Bridge	2012/12/14	Sunny	0.3	0.0	28	36	4	7	<1	<1	<1		
25	Gantsugawa River		JA Yokohashi	2012/12/14	Sunny	0.2	0.0	77	35	2	3	<1	<1	<1		
26	Nagaregawa River		Suhoibashi Bridge	Kashimashi City	2012/12/12	Sunny	0.2	0.0	>100	46	3	2	<1	<1	<1	
27	Sonobegawa River		Sonobeshinbashi Bridge	Omitamashi City	2012/12/10	Sunny	0.8	0.0	65	33	5	3	<1	<1	<1	
37	Sannogawa River		Tokorobashi Bridge	Ishiohoshi City/Omitamashi City	2012/12/10	Sunny	0.5	0.0	70	93	3	2	<1	<1	<1	
38	Kasumigaura Lake	Koiesgawa River	Heiwabashi Bridge	Ishiohoshi City	2012/12/10	Sunny	0.3	0.0	73	21	2	2	<1	<1	<1	
39		Kajinashigawa River	Kamishukubashi Bridge	Namegatashi City	2012/12/12	Sunny	0.3	0.0	65	49	4	2	<1	<1	<1	
28		Hishikigawa River	Hishikibashi Bridge	2012/12/12	Sunny	0.2	0.0	>100	29	<1	1	<1	<1	<1		
29		Ichinosegawa River	Kawanakabashi Bridge	Kasumigaurashi City	2012/12/12	Sunny	1.2	0.0	33	32	7	6	<1	<1	<1	
30		Sakaigawa River	Sakabashi Bridge/National Route 354	Tsuchiurashi City	2012/12/11	Sunny	0.4	0.0	18	50	13	13	<1	<1	<1	
31		Shinkawa River	Shintenbashi Bridge	2012/12/11	Sunny	1.5	0.0	43	44	6	6	<1	<1	<1		
32		Sakuragawa River	Eiribashi Bridge	Tsuchiurashi City/Tsukubashi City	2012/12/11	Sunny	0.2	0.0	94	32	4	3	<1	<1	<1	
33		Bizengawa River	Bizengawabashi Bridge	2012/12/11	Sunny	0.7	0.0	42	40	9	6	<1	<1	<1		
34		Hanamurogawa River	Shinwabashi Bridge	Tsuchiurashi City	2012/12/11	Sunny	0.2	0.0	53	44	12	7	<1	<1	<1	
35		Seimeigawa River	Katsubashi Bridge	Amimachi Town	2012/12/10	Sunny	0.4	0.0	45	46	13	6	<1	<1	<1	
36	Onogawa River	Okuharabashi Bridge	Ryugasaki City/Inashikishi City	2012/12/10	Sunny	0.3	0.0	61	64	3	3	<1	<1	<1		
40	Shintonegawa River	Shintonebashi Bridge	Inashikishi City	2012/12/14	Sunny	2.0	0.0	43	59	6	7	<1	<1	<1		
41	Hitachitonegawa River	Yorokoshigawa River	Horinouchibashi Bridge	Itakoshi City	2012/12/14	Sunny	0.5	0.0	90	36	2	3	<1	<1	<1	
42		Mackawa River	Ayamebashi Bridge	Itakoshi City	2012/12/14	Sunny	2.5	0.0	30	43	11	7	<1	<1	<1	
43	Kinugawa River	Kinugawa River	Kawashimabashi Bridge	Chikusetsu City	2012/12/19	Sunny	0.5	0.0	89	24	3	1	<1	<1	<1	
44			Takishitabashi Bridge	Moriyashi City	2012/12/20	Sunny	0.3	0.0	53	27	3	2	<1	<1	<1	
45		Tagawa River	Tagawabashi Bridge	Chikusetsu City	2012/12/19	Sunny	0.2	0.0	>100	35	2	1	<1	<1	<1	
46	Kokaigawa River	Kokaigawa River	Kurokobashi Bridge	Chikusetsu City	2012/12/19	Sunny	0.2	0.0	49	32	7	5	<1	<1	<1	
47			Fumimakubashi Bridge	Ryugasaki City/Torideshi City	2012/12/20	Sunny	0.5	0.0	67	31	5	3	<1	<1	<1	
48		Yatagawa River	Maruyamabashi Bridge	2012/12/20	Sunny	1.0	0.0	52	32	4	3	<1	<1	<1		
49		Nishiyatagawa River	Sakaimitabashi Bridge	Tsukubashi City	2012/12/21	Sunny	0.2	0.0	70	31	2	2	<1	<1	<1	
50		Inarigawa River	Ogukibashi Bridge	2012/12/20	Sunny	0.5	0.0	>100	33	1	1	<1	<1	<1		
51	Tonogawa River	Tonogawa River	Kuribashi Bridge	Kogashi City	2012/12/19	Sunny	0.3	0.0	55	37	12	5	<1	<1	<1	
52			Fukawa	Tonemachi Town	2012/12/20	Sunny	0.3	0.0	85	29	4	3	<1	<1	<1	
53			Sawara	Inashikishi City	2012/12/21	Cloudy	0.4	0.0	46	45	7	6	<1	<1	<1	

\*Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.

ORiver: Sediment Monitoring Results

No.	Sampling point				Sampling date	Weather	Full depth m	General items			Concentration of radioactive material Bq/kg (dried mud)				Remarks			
	Water body	Point	Municipality	Mud sampling depth cm				Mud content %	Property	Radioactive iodine		Radioactive cesium						
										I-131	Cs-134	Cs-137	Total					
1	Taga River System	Satonogawa River	Yamagoyabashi Bridge	Kitaibarakishi City	2012/12/10	Sunny	0.3	3	91	Sand	<30	58	95	153				
2			Murayabashi Bridge			2012/12/10	Snow	1.0	3	89	Sand	<30	66	110	176			
3			Kurabeishi			2012/12/10	Snow	0.7	5	90	Sand	<30	32	56	88			
4			Hanazonogawa River	Isonarebashi Bridge		2012/12/10	Snow	0.5	3	91	Sand	<30	25	43	68			
5			Okitagawa River	Sakaebashi Bridge	Takahagishi City	2012/12/10	Snow	1.0	5	86	Sand	<30	28	59	87			
6				Sakaibashi Bridge	Kitaibarakishi City	2012/12/10	Sunny	1.0	5	82	Sand/silt	<30	110	200	310			
7			Hanamikigawa River	Shimbananukibashi Bridge	Takahagishi City	2012/12/11	Sunny	0.6	5	93	Sand	<30	29	53	82			
8	Kujigawa River System	Kujigawa River	Yamagata	Hitachiomiya City	2012/12/5	Sunny	1.4	5	93	Sand	<30	<10	10	10				
9				Sakakibashi Bridge	Hitachishi City/Tokaimura Village	2012/12/5	Sunny	0.6	5	70	Sand/silt	<30	62	94	156			
10	Nakagawa River	Nakagawa River	Noguchi	Hitachiomiya City/Shirosatomachi Town	2012/12/5	Sunny	1.7	5	80	Sand	<30	34	54	88				
11				Shimokuni	Mitoshi City	2012/12/7	Sunny	2.5	5	78	Sand	<30	39	77	116			
12				Katsutabashi Bridge	Mitoshi City/Hitachinakashi City	2012/12/7	Sunny	7.0	5	50	Silt	<30	280	480	760			
13			Nakamarugawa River	Yanagisawabashi Bridge	Hitachinakashi City	2012/12/6	Sunny	2.0	5	75	Silt	<30	190	320	510			
14		Hinumagawa River	Hinumamaekawa River	Nagaokabashi Bridge	Ibarakimachi Town	2012/12/6	Sunny	0.3	2	94	Gravel/sand	<30	40	69	109			
15				Hinumagawa River		Takahashi	2012/12/7	Sunny	0.5	5	94	Sand	<30	20	37	57		
16				Kanseigawa River	Kanseibashi Bridge	Hokotashi City/Oaraimachi Town	2012/12/6	Sunny	0.3	2	88	Sand	<30	52	87	139		
17				Daiyagawa River	Oyabashi Bridge		2012/12/6	Sunny	0.5	5	89	Sand	<30	49	94	143		
18				Hinumagawa River	Hinumabashi Bridge		Mitoshi City/Oaraimachi Town	2012/12/6	Sunny	1.1	5	66	Silt	<30	120	210	330	
19				Hokotagawa River	Asahibashi Bridge		Hokotashi City	2012/12/6	Sunny	1.5	5	68	Silt	<30	130	240	370	
20		Kitaura Lake	Tomoegawa River	Shimomoeawabashi Bridge	2012/12/6	Sunny		1.2	5	59	Silt	<30	190	350	540			
21				Taiyogawa River	Tazukabashi Bridge	2012/12/6		Sunny	0.2	3	93	Sand	<30	61	98	159		
22				Takedagawa River	Uchijukuobashi Bridge	Namegatashi City		2012/12/12	Sunny	0.3	10	79	Sand	<30	150	230	380	
23			Yamadagawa River	Nioroshibashi Bridge	2012/12/12			Sunny	0.3	3	61	Mud	<30	12	23	35		
24			Kurakawa River	Kurakawabashi Bridge	2012/12/14			Sunny	0.3	1	58	Mud	<30	100	190	290		
25			Gantsugawa River	JA Yokobashi	2012/12/14		Sunny	0.2	5	83	Sand/silt	<30	94	170	264			
26			Nagaregawa River	Suboibashi Bridge	Kashimashi City		2012/12/12	Sunny	0.2	2	82	Sand	<30	220	370	590		
27	Kasumi River		Sonobegawa River	Sonobeshinbashi Bridge	Omitamashi City	2012/12/10	Sunny	0.8	5	74	Silt	<30	100	190	290			
28				Samnogawa River	Tokorobashi Bridge	Ishiohoshi City/Omitamashi City	2012/12/10	Sunny	0.5	3	75	Silt	<30	550	960	1,510		
29				Koiesogawa River	Heiwabashi Bridge	Ishiohoshi City	2012/12/10	Sunny	0.3	3	57	Silt	<30	270	500	770		
30			Kajinshigawa River	Kamishukubashi Bridge	Namegatashi City	2012/12/12	Sunny	0.3	8	84	Sand	<30	62	110	172			
31			Hishikigawa River	Hishikibashi Bridge	Kasumi River	2012/12/12	Sunny	0.2	4	83	Sand	<30	220	390	610			
32			Ichinosegawa River	Kawanakabashi Bridge		2012/12/12	Sunny	1.2	10	81	Sand/mud	<30	330	590	920			
33			Sakaigawa River	Sakaibashi Bridge/National Route 354		Tsuchiurashi City	2012/12/11	Sunny	0.4	3	66	Clay	<30	40	72	112		
34			Shinkawa River	Shintenbashi Bridge	Tsuchiurashi City	2012/12/11	Sunny	1.5	15	42	Silt	<30	810	1,400	2,210			
35			Sakuragawa River	Eiribashi Bridge		2012/12/11	Sunny	0.2	10	53	Silt	<30	73	140	213			
36			Bizengawa River	Bizengawabashi Bridge		2012/12/11	Sunny	0.7	5	75	Sand	<30	1,000	1,800	2,800			
37		Hanamurogawa River	Shinwabashi Bridge	2012/12/11		Sunny	0.2	4	68	Mud	<30	10	19	29				
38	Riviera	Seimeigawa River	Katsubashi Bridge	Amimachi Town	2012/12/10	Sunny	0.4	2	52	Silt	<30	1,500	2,600	4,100				
39			Onogawa River	Okuharabashi Bridge	Ryugasakishi City/Inashikishi City	2012/12/10	Sunny	0.3	4	66	Sand	<30	350	630	980			
40			Shintonogawa River	Shintonobashi Bridge	Inashikishi City	2012/12/14	Sunny	2.0	12	71	Sand/silt	<30	150	250	400			
41		Hitachitogawa River	Yorokoshigawa River	Horinouchibashi Bridge	Itakoshi City	2012/12/14	Sunny	0.5	1	77	Gravel/sand	<30	66	130	196			
42				Mackawa River	Ayamebashi Bridge	Itakoshi City	2012/12/14	Sunny	2.5	8	62	Silt	<30	180	320	500		
43		Kimugawa River	Kimugawa River	Kawashimabashi Bridge	Chikuseishi City	2012/12/19	Sunny	0.5	3	89	Gravel/sand	<30	<10	<10	-			
44				Tagawabashi Bridge	Moriyashi City	2012/12/20	Sunny	0.3	10	54	Silt	<30	140	240	380			
45				Tagawa River	Tagawabashi Bridge	Chikuseishi City	2012/12/19	Sunny	0.2	2	92	Gravel/sand	<30	<10	24	24		
46		Kokaigawa River	Kurokobashi Bridge	Chikuseishi City	Ryugasakishi City/Torideshi City	2012/12/19	Sunny	0.2	3	75	Sand	<30	53	100	153			
47				Fumimabashi Bridge		2012/12/20	Sunny	0.5	10	79	Sand	<30	37	75	112			
48			Yatagawa River	Maruyabashi Bridge	Tsukubashi City	2012/12/20	Sunny	1.0	15	63	Silt	<30	300	540	840			
49			Nishiyatagawa River	Sakaimatsubashi Bridge		2012/12/21	Sunny	0.2	3	48	Clay	<30	250	500	750			
50			Inarigawa River	Ogukibashi Bridge		2012/12/20	Sunny	0.5	6	76	Sand	<30	580	1,000	1,580			
51	Tonogawa River	Kuribashi Bridge	Kogashi City	Tonemachi Town	2012/12/19	Sunny	0.3	5	88	Sand	<30	14	25	39				
52			Fukawa		2012/12/20	Sunny	0.3	3	80	Sand	<30	41	81	122				
53			Sawara	Inashikishi City	2012/12/21	Cloudy	0.4	5	94	Sand	<30	47	86	133				

\*Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.

ORiver: Surrounding Environment Monitoring Results

No.	Sampling point			Sampling date	Weather	Property	Left bank				Air dose $\mu$ Sv/h	Property	Right bank				Air dose $\mu$ Sv/h	Remarks		
	Water body	Point	Municipality				Concentration of radioactive material Bq/kg (dry)			Air dose $\mu$ Sv/h			Concentration of radioactive material Bq/kg (dry)							
							Radioactive iodine I-131	Cs-134	Cs-137				Total	Radioactive iodine I-131	Cs-134	Cs-137			Total	
1	Taga River System	Satonegawa River	Yamagoyabashi Bridge	Kitabarakashi City	2012/12/10	Sunny	Loamy	<30	1,300	2,200	3,500	0.36	Loamy	<30	430	750	1,180	0.33		
2		Murayamabashi Bridge	2012/12/10		Snow	Loamy	<30	390	660	1,050	0.14	Loamy	<30	220	400	620	0.15			
3		Hamazonogawa River	Kurabeishi		2012/12/10	Snow	Loamy	<30	65	120	185	0.17	Loamy	<30	92	160	252	0.14		
4		Iomarebashi Bridge	2012/12/10		Snow	Loamy	<30	660	1,100	1,760	0.23	Loamy	<30	800	1,400	2,200	0.23			
5		Okitagawa River	Sakaebashi Bridge		Takahagishi City	2012/12/10	Snow	Sandy	<30	110	220	330	0.12	Loamy	<30	120	200	320	0.08	
6		Sakabashi Bridge	Kitabarakashi City		2012/12/10	Sunny	Loamy	<30	490	810	1,300	0.17	Loamy	<30	880	1,500	2,380	0.17		
7		Hananakigawa River	Shinananakubashi Bridge		Takahagishi City	2012/12/11	Sunny	Sandy	<30	120	210	330	0.16	Loamy	<30	810	1,400	2,210	0.19	
8		Kujigawa River System	Kujigawa River		Yamagata	Hitachiomiyashi City	2012/12/5	Sunny	Loamy/sandy	<30	93	160	253	0.12	Sandy/skeletal	<30	<10	17	0.10	
9	Naka River System	Sakabashi Bridge	Hitachishi City/Tokamura Village	2012/12/5	Sunny	Loamy/sandy	<30	180	330	510	0.10	Loamy	<30	180	300	480	0.13			
10		Nakagawa River	Noguchi	Hitachiomiyashi City/Shirosatomachi Town	2012/12/5	Sunny	Loamy	<30	150	290	440	0.12	Loamy	<30	90	150	240	0.09		
11		Shimokami	Mitoshi City	2012/12/7	Sunny	Loamy	<30	36	80	116	0.10	Loamy	<30	290	490	780	0.14			
12		Katsubashi Bridge	Mitoshi City/Hitachinakashi City	2012/12/7	Sunny	Loamy	<30	92	160	252	0.09	Loamy	<30	54	85	139	0.11			
13		Nakanogawa River	Yanagisawabashi Bridge	Hitachinakashi City	2012/12/6	Sunny	Loamy	<30	180	320	500	0.12	Loamy	<30	240	400	640	0.12		
14		Hinumanaokawa River	Nagakobashi Bridge		2012/12/6	Sunny	Loamy/skeletal	<30	28	43	71	0.09	Loamy/skeletal	<30	280	480	760	0.13		
15		Hinumagawa River	Takahashi	Barakimachi Town	2012/12/7	Sunny	Loamy	<30	89	170	259	0.12	Loamy	<30	75	110	185	0.10		
16		Kansai River	Kansai Bridge		2012/12/6	Sunny	Loamy	<30	330	580	910	0.11	Loamy	<30	480	860	1,340	0.14		
17		Duyagawa River	Oyabashi Bridge	Hokotashi City/Ouramachi Town	2012/12/6	Sunny	-	-	-	-	-	0.07	-	-	-	-	-	-	Soil not exposed	
18		Hinumagawa River	Hinumabashi Bridge	Mitoshi City/Ouramachi Town	2012/12/6	Sunny	Loamy	<30	450	820	1,270	0.14	Loamy	<30	410	730	1,140	0.15		
19	Tone River System	Hokotagawa River	Asahabashi Bridge		2012/12/6	Sunny	-	-	-	-	0.10	-	-	-	-	-	-	-	Soil not exposed	
20		Tomoogawa River	Shintomoogawabashi Bridge	Hokotashi City	2012/12/6	Sunny	Loamy	<30	130	250	380	0.13	Loamy	<30	69	120	189	0.13		
21		Taiyogawa River	Tazukabashi Bridge		2012/12/6	Sunny	Loamy	<30	40	85	125	0.12	Loamy	<30	71	100	171	0.11		
22		Takedagawa River	Uchijukabashi Bridge		2012/12/12	Sunny	Loamy/sandy	<30	150	270	420	0.14	Loamy/sandy	<30	98	140	238	0.13		
23		Yamudagawa River	Niroshibashi Bridge		2012/12/12	Sunny	Loamy/sandy/skeletal	<30	290	500	790	0.12	Loamy/sandy/skeletal	<30	480	790	1,270	0.11		
24		Kurakawa River	Kurakawabashi Bridge	Namegatashi City	2012/12/14	Sunny	Loamy/skeletal	<30	110	220	330	0.13	Loamy/sandy/skeletal	<30	340	620	960	0.12		
25		Gantsugawa River	JA Yokohashi		2012/12/14	Sunny	Loamy	<30	130	230	360	0.13	Loamy	<30	110	200	310	0.13		
26		Nagaregawa River	Suhobashi Bridge	Kashimashi City	2012/12/12	Sunny	-	-	-	-	-	0.09	-	-	-	-	-	-	0.08	Soil not exposed
27		Sonobegawa River	Sonobeshibashi Bridge	Omitamashi City	2012/12/10	Sunny	Loamy	<30	270	460	730	0.11	Loamy	<30	330	600	930	0.12		
28		Sannogawa River	Tokorobashi Bridge	Ishikashi City/Omitamashi City	2012/12/10	Sunny	Skeletal	<30	72	130	202	0.12	Loamy	<30	28	47	75	0.13		
29		Koieogawa River	Heiwabashi Bridge	Ishikashi City	2012/12/10	Sunny	Loamy	<30	300	540	840	0.15	Loamy	<30	150	270	420	0.14		
30		Kajinabashi River	Kajinabashi Bridge	Namegatashi City	2012/12/12	Sunny	Loamy/sandy	<30	74	130	204	0.11	Loamy/sandy	<30	110	180	290	0.13		
31		Hshikigawa River	Hshikibashi Bridge	Kasumigaurashi City	2012/12/12	Sunny	Loamy	<30	130	230	360	0.15	Loamy/sandy	<30	350	580	930	0.13		
32		Ichinosogawa River	Kawanakabashi Bridge		2012/12/12	Sunny	Loamy	<30	74	120	194	0.11	Loamy	<30	96	140	236	0.13		
33		Sakagawa River	Sakabashi Bridge/National Route 354	Tsuchiurashi City	2012/12/11	Sunny	Loamy	<30	440	790	1,230	0.16	Loamy	<30	230	420	650	0.13		
34		Shinkawa River	Shintenbashi Bridge		2012/12/11	Sunny	Loamy	<30	240	440	680	0.14	Loamy/sandy	<30	120	210	330	0.13		
35		Sakuragawa River	Eriheshi Bridge	Tsuchiurashi City/Tsukubashi City	2012/12/11	Sunny	Loamy/leaf mold	<30	400	680	1,080	0.13	Loamy/skeletal	<30	59	110	169	0.12		
36		Bizengawa River	Bizengawabashi Bridge		2012/12/11	Sunny	Loamy/skeletal	<30	390	670	1,060	0.13	Loamy/skeletal	<30	380	670	1,050	0.14		
37		Hanumogawa River	Shinwabashi Bridge	Tsuchiurashi City	2012/12/11	Sunny	Loamy	<30	520	890	1,410	0.22	Loamy/skeletal	<30	260	470	730	0.18		
38		Seineigawa River	Katsubashi Bridge	Amimachi Town	2012/12/10	Sunny	Loamy/sandy	<30	350	610	960	0.21	Loamy/sandy	<30	470	790	1,260	0.21		
39		Onogawa River	Okaharabashi Bridge	Ryugasakashi City/Inashikashi City	2012/12/10	Sunny	Loamy	<30	390	660	1,050	0.13	Loamy	<30	490	820	1,310	0.19		
40		Shintonegawa River	Shintonebashi Bridge	Inashikashi City	2012/12/14	Sunny	Sandy	<30	130	220	350	0.15	Loamy/skeletal	<30	200	330	530	0.17		
41		Hitachionogawa River	Yorokoshigawa River	Horinoshibashi Bridge	Itakoshi City	2012/12/14	Sunny	Loamy/sandy	<30	130	240	370	0.10	Loamy/skeletal	<30	89	150	239	0.10	
42		Mackawa River	Ayamebashi Bridge	Itakoshi City	2012/12/14	Sunny	Loamy	<30	90	160	250	0.10	Sandy	<30	16	28	44	0.07		
43		Kinugawa River	Kawashimabashi Bridge	Chikuseshi City	2012/12/19	Sunny	Loamy	<30	82	160	242	0.10	Loamy	<30	38	77	115	0.09		
44			Takishitabashi Bridge	Moriyashi City	2012/12/20	Sunny	Loamy	<30	530	950	1,480	0.17	Loamy	<30	450	790	1,240	0.18		
45			Tagawa River	Tagawabashi Bridge	Chikuseshi City	2012/12/19	Sunny	Loamy	<30	36	74	110	0.09	Loamy	<30	57	110	167	0.09	
46		Kokaigawa River	Kirokobashi Bridge	Chikuseshi City	2012/12/19	Sunny	Loamy	<30	110	180	290	0.09	Loamy	<30	92	170	262	0.10		
47			Fumakibashi Bridge	Ryugasakashi City/Torideshi City	2012/12/20	Sunny	Loamy	<30	290	550	840	0.13	Loamy	<30	160	290	450	0.14		
48			Yatagawa River	Maruyamabashi Bridge		2012/12/20	Sunny	Loamy	<30	860	1,500	2,360	0.17	Loamy	<30	530	940	1,470	0.14	
49	Nishiyatagawa River		Sakaimatsubashi Bridge	Tsukubashi City	2012/12/21	Sunny	Loamy	<30	42	78	120	0.08	Loamy	<30	330	570	900	0.13		
50	Inarigawa River		Ogikubashi Bridge		2012/12/20	Sunny	Loamy	<30	570	1,000	1,570	0.15	Loamy	<30	490	850	1,340	0.17		
51	Tonegawa River	Kiribashi Bridge	Kogashi City	2012/12/19	Sunny	Loamy	<30	130	240	370	0.10	Loamy	<30	71	150	221	0.08			
52		Fukawa	Tonemachi Town	2012/12/20	Sunny	Loamy	<30	260	460	720	0.18	Loamy	<30	490	860	1,350	0.18			
53		Sawara	Inashikashi City	2012/12/21	Cloudy	Loamy	<30	120	240	360	0.08	Loamy	<30	140	280	420	0.12			

\*Sampling points for rivers are listed from north to south, and for different points along the river, from upstream to downstream.

\*Air dose was measured with a survey meter, TCS-171 or TCS-172 of Hitachi-Aloka Medical, Ltd.

○Lake and Headwater: Water Quality Monitoring Results

Sampling point				Sampling date	Weather	Full depth m	General items					Concentration of radioactive material Bq/L			Remarks	
No.	Point		Layer				Sampling depth m	Secchi disk depth m	Electrical conductivity mS/m	SS mg/L	Turbidity	Radioactive iodine		Radioactive cesium		
												I-131	Cs-134	Cs-137		
1	Hiroura	Surface layer	2012/12/11	Sunny	3.0	0.5	2.4	2	3	2	<1	<1	<1			
		Lower layer							2.0	2	4	3	<1	<1	<1	
2	Hinuma Lake	Miyamae	2012/12/11	Sunny	3.3	0.5	2.4	2	3	2	<1	<1	<1			
		Lower layer							2.3	2	2	1	<1	<1	<1	
3	Oyazawa	Surface layer	2012/12/11	Sunny	2.6	0.5	2.3	2	1	1	<1	<1	<1			
		Lower layer							1.6	2	1	1	<1	<1	<1	
4	Offshore of Tamatsukuri	Surface layer	2012/12/5	Sunny	7.1	0.5	0.6	34	6	5	<1	<1	<1			
		Lower layer							6.1	33	6	8	<1	<1	<1	
5	Offshore of Kakeuma	Surface layer	2012/12/5	Sunny	2.1	0.5	0.4	34	8	12	<1	<1	<1			
		Lower layer							1.1	34	12	10	<1	<1	<1	
6	Center of the lake	Surface layer	2012/12/5	Sunny	6.4	0.5	0.8	33	5	6	<1	<1	<1			
		Lower layer							5.4	33	5	5	<1	<1	<1	
7	Offshore of Aso	Surface layer	2012/12/5	Sunny	1.7	0.5	0.4	37	11	9	<1	<1	<1			
		Lower layer							0.7	37	12	9	<1	<1	<1	
8	Offshore of Kamaya	Surface layer	2012/12/5	Sunny	6.9	0.5	0.9	33	6	6	<1	<1	<1			
		Lower layer							5.9	32	9	6	<1	<1	<1	
9	Jingubashi Bridge	Surface layer	2012/12/5	Sunny	2.2	0.5	0.5	47	7	8	<1	<1	<1			
		Lower layer							1.2	43	9	8	<1	<1	<1	
10	Sotonasakura Lake	Surface layer	2012/12/5	Sunny	2.1	0.5	0.7	53	6	6	<1	<1	<1			
		Lower layer							1.1	54	7	6	<1	<1	<1	
11	Ikisu	Surface layer	2012/12/5	Sunny	5.4	0.5	0.8	56	6	5	<1	<1	<1			
		Lower layer							4.4	119	7	6	<1	<1	<1	
12	Ushikunuma Lake	Center of Ushikunuma Lake	2012/12/6	Sunny	1.4	0.5	0.8	36	11	7	<1	<1	<1			
		Lower layer							-	-	-	-	-	-	Collected only from the surface layer due to shallow water	

○Lake and Headwater: Sediment and Surrounding Environment (Lake Shore) Monitoring Results

Sampling point				Sampling date	Weather	Full depth m	Sediment										Surrounding environment (lake shore)					Remarks
No.	Point		General items				Concentration of radioactive material Bq/kg (dried mud)							Soil								
			Mud sampling cm				Mud content %	Property	Radioactive iodine	Radioactive cesium			Property	Concentration of radioactive material Bq/kg (dry)			Air dose μSv/h					
				I-131	Cs-134	Cs-137	Total	I-131	Cs-134	Cs-137	Total	I-131		Cs-134	Cs-137	Total						
1	Hinuma Lake	Hiroura	2012/12/11	Sunny	3.0	5	51.1	Silt	<30	79	140	219	Loamy	<30	17	29	46	0.16				
2		Miyamae	2012/12/11	Sunny	3.3	10	36.9	Silt	<30	42	76	118	Loamy	<30	21	43	64	0.07				
3		Oyazawa	2012/12/11	Sunny	2.6	10	40.2	Silt	<30	240	450	690	-	-	-	-	-	-	Soil not exposed			
4	Kasumigaura Lake	Offshore of Tamatsukuri	2012/12/5	Sunny	7.1	10	32.1	Silt	<30	130	240	370	Sandy	<30	35	76	111	0.08				
5		Offshore of Kakeuma	2012/12/5	Sunny	2.1	10	84.0	Sand	<30	92	160	252	Sandy	<30	49	88	137	0.12				
6		Center of the lake	2012/12/5	Sunny	6.4	10	27.6	Silt	<30	220	410	630	-	-	-	-	-	-	Soil not exposed			
7		Offshore of Aso	2012/12/5	Sunny	1.7	10	85.6	Sand	<30	66	120	186	Sandy	<30	120	220	340	0.11				
8	Kitaura Lake	Offshore of Kamaya	2012/12/5	Sunny	6.9	10	27.9	Silt	<30	89	150	239	Loamy/skeletal	<30	1,600	###	4,400	0.11				
9		Jingubashi Bridge	2012/12/5	Sunny	2.2	10	77.5	Sand	<30	34	59	93	Loamy	<30	19	35	54	0.05				
10	Hitachitonegawa River	Sotonasakura Lake	2012/12/5	Sunny	2.1	10	80.5	Sand	<30	35	67	102	Loamy	<30	77	150	227	0.08				
11		Ikisu	2012/12/5	Sunny	5.4	10	78.4	Sand	<30	54	100	154	Loamy	<30	120	220	340	0.08				
12	Ushikunuma Lake	Center of Ushikunuma Lake	2012/12/6	Sunny	1.4	5	32.3	Silt	<30	440	770	1,210	Loamy	<30	53	92	145	0.11				

\*Air dose was measured with a survey meter, TCS-171 or TCS-172 of Hitachi-Aloka Medical, Ltd.  
 \*Sampling points are listed from north to south.

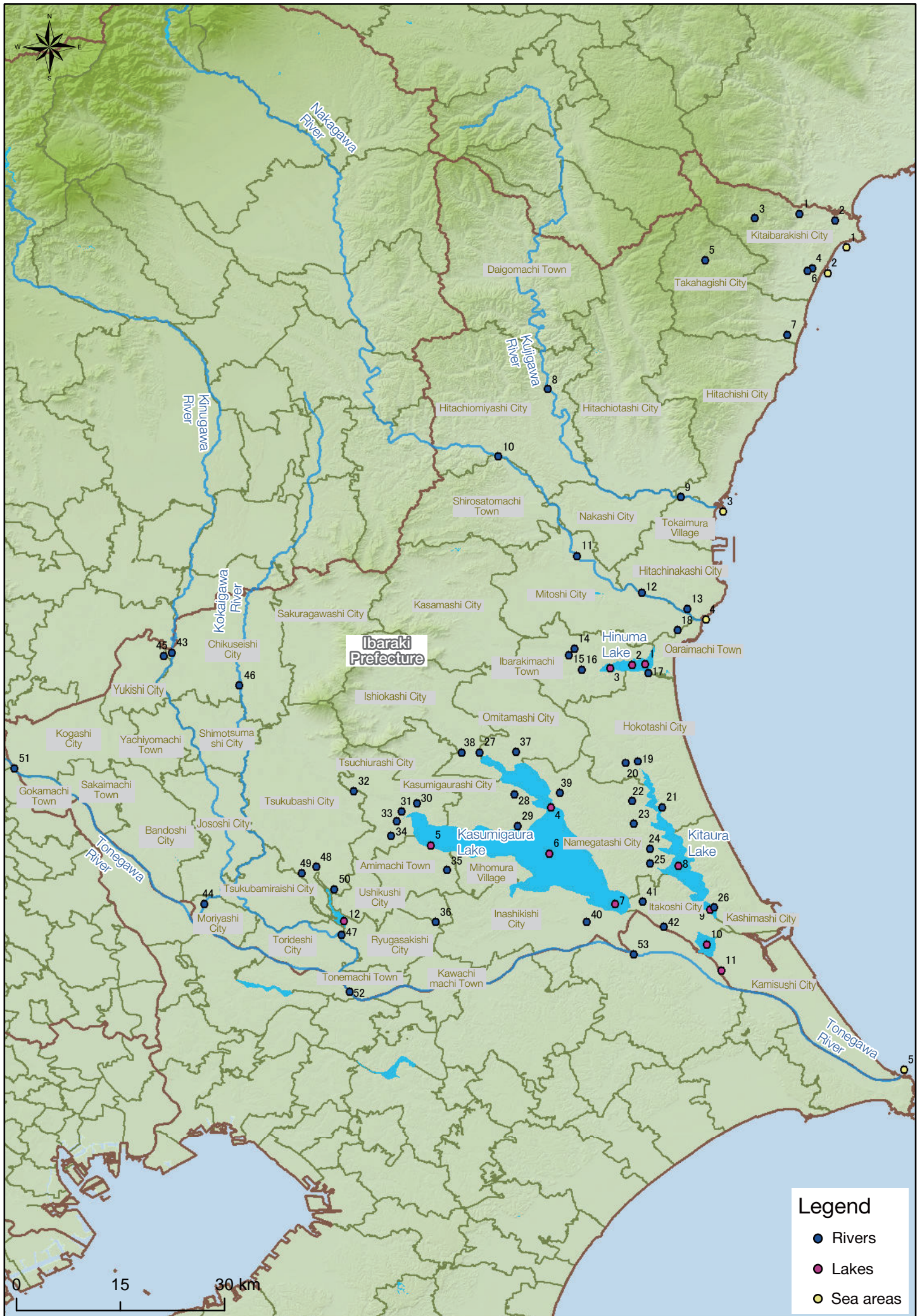
**OCoast: Water Quality Monitoring Results**

Sampling point		Sampling date	Weather	Full depth	General items				Concentration of radioactive material Bq/L			Remarks	
No.	Water body				Sampling depth m	Secchi disk depth m	Salinity ‰	SS mg/L	Turbidity	I-131	Cs-134		Cs-137
1	Offshore of Satonegawa River Estuary	Surface layer	2012/10/24	Sunny	11.6	0.5	3.0	33	6	1	<1	<1	<1
		Lower layer				10.6		33	4	1	<1	<1	<1
		Surface layer	2012/11/19	Cloudy	15.0	0.5	3.5	37	4	1	<1	<1	<1
		Lower layer				14.0		37	3	1	<1	<1	<1
		Surface layer	2012/12/25	Sunny	12.0	0.5	5.5	36	8	1	<1	<1	<1
		Lower layer				11.0		36	5	1	<1	<1	<1
2	Offshore of Okitagawa River Estuary	Surface layer	2012/10/24	Sunny	12.2	0.5	4.5	34	3	1	<1	<1	<1
		Lower layer				11.2		33	5	1	<1	<1	<1
		Surface layer	2012/11/19	Cloudy	14.0	0.5	4.5	35	3	1	<1	<1	<1
		Lower layer				13.0		36	4	1	<1	<1	<1
		Surface layer	2012/12/25	Sunny	11.7	0.5	8.5	35	2	1	<1	<1	<1
		Lower layer				10.7		36	4	1	<1	<1	<1
3	Offshore of Momiyagawa River/Kujigawa River Estuaries	Surface layer	2012/10/24	Sunny	9.0	0.5	2.5	29	6	3	<1	<1	<1
		Lower layer				8.0		42	6	2	<1	<1	<1
		Surface layer	2012/11/19	Cloudy	12.0	0.5	4.0	38	6	1	<1	<1	<1
		Lower layer				11.0		38	5	1	<1	<1	<1
		Surface layer	2012/12/25	Sunny	9.3	0.5	5.0	20	4	2	<1	<1	<1
		Lower layer				8.3		35	6	2	<1	<1	<1
4	Neighboring water body of Ken-o, Offshore of Nakagawa River	Surface layer	2012/10/24	Sunny	6.3	0.5	2.0	19	5	3	<1	<1	<1
		Lower layer				5.3		32	6	2	<1	<1	<1
		Surface layer	2012/11/19	Cloudy	8.0	0.5	2.0	33	4	2	<1	<1	<1
		Lower layer				7.0		37	3	1	<1	<1	<1
		Surface layer	2012/12/25	Sunny	6.6	0.5	4.0	29	7	3	<1	<1	<1
		Lower layer				5.6		34	10	4	<1	<1	<1
5	Offshore of Tonegawa River Estuary	Surface layer	2012/10/22	Sunny	9.2	0.5	2.5	22	4	2	<1	<1	<1
		Lower layer				8.2		31	5	1	<1	<1	<1
		Surface layer	2012/11/26	Rain	9.5	0.5	6.0	29	4	1	<1	<1	<1
		Lower layer				8.5		38	8	1	<1	<1	<1
		Surface layer	2012/12/27	Sunny	7.2	0.5	4.0	33	6	2	<1	<1	<1
		Lower layer				6.2		35	8	2	<1	<1	<1

**OCoast: Sediment Monitoring Results**

Sampling point		Sampling date	Weather	Full depth	General items			Concentration of radioactive material Bq/kg (dried mud)				Remarks
No.	Water body				Mud sampling depth cm	Mud content %	Property	I-131	Cs-134	Cs-137	Total	
1	Offshore of Satonegawa River Estuary	2012/10/24	Sunny	11.6	5	87	Sand	<30	20	32	52	
		2012/11/19	Cloudy	15.0	10	90	Sand	<30	<10	<10	-	
		2012/12/25	Sunny	12.0	15	85	Sand	<30	13	16	29	
2	Offshore of Okitagawa River Estuary	2012/10/24	Sunny	12.2	3	83	Sand	<30	<10	18	18	
		2012/11/19	Cloudy	14.0	10	84	Sand	<30	<10	17	17	
		2012/12/25	Sunny	11.7	15	82	Sand	<30	14	16	30	
3	Offshore of Momiyagawa River/Kujigawa River Estuaries	2012/10/24	Sunny	9.0	5	83	Sand	<30	15	17	32	
		2012/11/19	Cloudy	12.0	10	83	Sand	<30	<10	12	12	
		2012/12/25	Sunny	9.3	5	83	Sand	<30	<10	14	14	
4	Neighboring water body of Ken-o Offshore of Nakagawa River	2012/10/24	Sunny	6.3	5	94	Sand	<30	<10	<10	-	
		2012/11/19	Cloudy	8.0	10	94	Sand	<30	<10	<10	-	
		2012/12/25	Sunny	6.6	15	95	Gravel/sand	<30	<10	<10	-	
5	Offshore of Tonegawa River Estuary	2012/10/22	Sunny	9.2	3	84	Sand	<30	<10	<10	-	
		2012/11/26	Rain	9.5	3	76	Sand	<30	<10	<10	-	
		2012/12/27	Sunny	7.2	3	86	Sand	<30	<10	<10	-	

•Sampling points are listed from north to south.



**Legend**

- Rivers
- Lakes
- Sea areas